

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave.St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001168**Date Inspected:** 05-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

CWI Inspectors: Wang Nan, Wu Ming Kai

Bay 3:

The QA Inspector observed ZPMC welder Mr. Xin Meng stencil 53742 is using welding procedure specification WPS-345-FCAW-2G(2F)-Repair using the flux cored welding process to make a repair of an undersize fillet weld on OBG PL80B side plate SP025 weld SP025-01-033. The QA Inspector observed Mr. Meng using 1.4 mm diameter E71T-1 welding electrode with a welding current of approximately 250 amps, 29.2 volts and the base material has a minimum preheat of 100° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Liu Zihong stencil 62447 is using welding procedure specification WPS-B-T-2132-2 using the flux cored welding process for fillet tack welds on OBG PL94C side plate SP050 stiffener weld SP050-01-010. The QA Inspector observed a welding current of approximately 275 amps 28.8 volts,

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

a CO2 shielding gas flow of 19 liters per hour and the base material had been preheated to a minimum of 60°C. Items observed by the QA Inspector appear to comply with project specifications.

QA Inspector observed ZPMC welder Ms. He Yu Mei stencil 48625 is using welding procedure specification WPS-B-T-2132-2 using the flux cored welding process for fillet tack welds on OBG PL102B side plate SP066 stiffener welds SP066-01-015 and SP066-01-016. The QA Inspector observed a welding current of approximately 275 amps, 27.0 volts a CO2 shielding gas flow of 18 liters per hour and the base material has a minimum preheat temperature of 60° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Wei Dashuai stencil 51246 is using welding procedure specification WPS-B-T-2132-2 using the flux cored welding process for fillet tack welds on OBG side plate SP027 stiffener weld SP027-01-019 and SP027-01-020. The QA Inspector observed 1.4 mm diameter E71T-1 welding electrode with a welding current of approximately 290 amps, 27.2 volts and the base material has a minimum preheat of 20°C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed three ZPMC welders using welding procedure specification WPS-B-T-2132-3 using the flux cored welding process for fillet welds on six OBG PL80B side plate SP025 stiffener welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 450 mm per minute. As the welding commences, each of the welders is responsible for two of the flux cored welding heads. All welders are using 1.4 mm diameter E71T-1 rolls of electrodes that have been marked as being installed earlier today. The QA Inspector observed all six welding machines have a shielding gas flow between 18 and 20 liters per minute as required by the WPS. Welder Mr. Liz Hanqian stencil 48810 completed weld SP025-01-027 with a welding current of approximately 260 amps and 29.0 volts and weld SP025-01-026 with a welding current of approximately 255 amps and 29.2 volts. Welder Mr. Xin Meng stencil 53742 completed weld SP025-01-031 with a welding current of approximately 270 amps and 31.5 volts and weld SP025-01-030 with a welding current of approximately 260 amps and 31.2 volts. Welder Mr. Li Shuliang stencil 48801 completed weld SP025-01-035 with a welding current of approximately 270 amps and 31.1 volts and weld SP025-01-034 with a welding current of approximately 260 amps and 31.4 volts. Items observed by the QA Inspector appear to comply with project specifications.

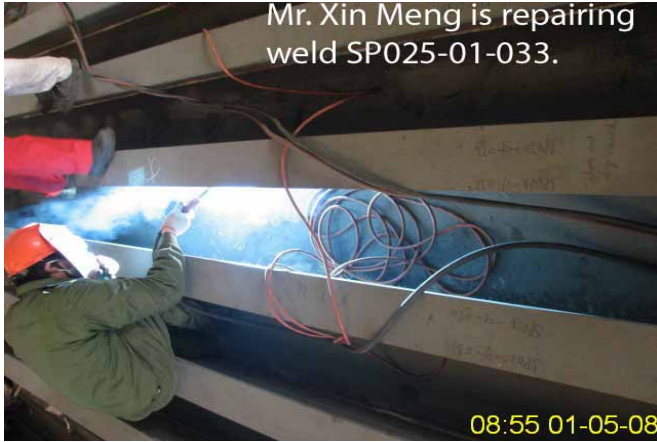
The QA Inspector observed ZPMC welder Mr. Xin Meng stencil 53742 is using welding procedure specification WPS-345-FCAW-2G(2F)-Repair using the flux cored welding process to make a repair of an undersize fillet weld on OBG PL80B side plate SP025 weld SP025-01-033. The QA Inspector observed Mr. Meng using 1.4 mm diameter E71T-1 welding electrode with a welding current of approximately 250 amps, 29.2 volts and the base material has a minimum preheat of 100° C. Items observed by the QA Inspector appear to comply with project. See the photograph below for additional information.

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---



### Summary of Conversations:

See above for summary of conversations.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

---

<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Cochran,Jim	QA Reviewer

---